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ABSTRACT

Three reliably different levels of anxiety produced in Ss during cognitive rehearsals of approaching feared objects did not lead to differential decreases of avoidance or fear in the presence of the feared object. Ss designated as Repressors on the Byrne R-S scale improved least. The amount of fear reported by Repressors during visualization was substantially related to ineffectiveness of treatment, and fear and avoidance were highly related. Similar results were not obtained from Sensitizers or an Intermediate group. Items in a fear history questionnaire were significantly related to amount of avoidance after treatment. (Author)

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Effects of Differential Anxiety Level And The Repression-Sensitization Dimension In Desensitization Therapy

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The relationship between the level of anxiety which occurs during visualization in desensitization therapy and the effectiveness of treatment was investigated in an experimental paradigm. From the Reciprocal Inhibition theory of Joseph Wolpe (1958) one would predict that the greatest decline in fear motivated avoidance would occur when anxiety was most suppressed during treatment. The Implosive theory of Thomas Stampl (1965) on the other hand would lead one to anticipate optimal effects of treatment when anxiety was maximized. A third hypothesis which can be developed is that the level of anxiety during visualization is related in a curvilinear manner to extent of improvement, and that both maximization and suppression of anxiety during treatment are superior to intermediate levels.

A secondary problem concerned an exploration of the realtionship between the defense orientation of individuals, as measured by the Byrne Repression-Sensitization Scale (R-S), (1963) and their ability to profit from desensitization therapies. Byrne describes the typical anxiety reducing mechanisms of Repressors as involving avoidance and those of Sensitizors as involving approach to anxiety arousing events.

A third issue was that of the relationship between reports by individuals of the history and generality of their fears and the susceptibility of the fear and avoidance to modification.

Method

Subjects

Volunteer Ss who reported fears of snakes and rats were recruited from four introductory psychology classes at California State College at Los Angeles. A Fear Survey Schedule was administered and students who reported Much or Very Much fear of rats, mice or snakes were contacted by phone. Fifty-four Ss were assigned to three equal groups on the basis of scores on the R-S scale. One third of the eighteen Ss with lowest R-S scores were assigned in a random fashion to each of three treatment conditions: High, Medium, and Low Anxiety arousal. Ss with the highest and with intermediate R-S scores were similarly assigned to treatments.

Procedure

The amount of subjective fear reported at the point of closest approach to the feared stimulus was determined for all Ss, and the point of closest approach, both in the presence of the feared object, recorded before and after treatment. The R-S scale was administered after determining the point of closest approach in the first session. All Ss received instruction and practice in relaxation, in maintaining muscular tension, and in finger tapping before treatment was initiated at the second meeting with Ss.

Ss in the Low Anxiety condition maintained a state of muscular relaxation during the visualization of approaching the fearful object. Ss in the Intermediate Anxiety condition performed a routine motor task (finger tapping at a constant rate). High Anxiety Ss maintained a state of muscular tension which had previously been demonstrated Wolpin (1966), Myeroff (1967) to be associated with verbal reports of increased fear during

visualization. All three groups therefore engaged in motor activities, and control was thereby provided for the distraction or suggestion value of engaging in muscular activity during treatment.

Ss visually rehearsed each of ten items in a standard fear hierarchy describing approaching, touching and lifting the feared object. Each item was rehearsed a predetermined number of times during two sessions separated by at least one day. Subjective fear estimates (Fear Thermometer) were obtained from Ss for each visualization. Two trained student therapists to whom Ss were randomly assigned conducted the three types of treatment with each E running half of the Ss in each cell of the design. Pre and Post criterion tests were conducted by the second author in the absence of information regarding R-S score and assigned treatment condition.

Results

Five mixed design, three way (experimental condition x R-S score x repetition of scene) analyses of variance of Fear Thermometer ($\bar{FT}$) scores during treatment were conducted, one each for scenes 2 (watching the snake in a glass cage from the door of the room), 4 (standing in front of the cage, snake moving), 6 (reaching into the cage with a rubber glove), 8 (poking the snake barehanded), and 10 (removing from cage with bare hands) of the standard fear hierarchy in order. Two assumptions were tested. The first was that the three experimental conditions would indeed be associated with reports of differential anxiety levels during treatment. The second assumption was that the level of anxiety reported would decrease with repetitions of the visualization of the scenes across all conditions.

Both assumptions were supported ($P < .01$) in all analyses. As expected, the Relaxation condition is associated with the lowest FT ($M=3.6$) score,

Tension with the highest FT (M= 6.7) score and Finger-tapping is intermediate (M= 5.3), on the ten point scale used. Moreover, the F for interaction is less than 1.0 in each analysis, indicating that the rate of decline of fear reported seems independent of the level of fear (i.e., experimental condition) during rehearsal. An incidental finding is that the fear ratings of the Sensitizers decrease at a faster rate during rehearsal than those of Repressors or Intermediates for scene 2 ($P < .01$) and scene 4, ($P \leq .05$).

Two four-way mixed design analyses of variance were conducted to evaluate the effects of treatment on avoidance of the feared object and on subjective reports of fear in its presence. The analysis of avoidance scores failed to substantiate any of the major hypotheses. An F ratio of less than 1.0 suggests that no reliable differences in avoidance of the feared stimulus result from differences in the level of anxiety during treatment. However, substantial improvement occurred in all groups, with forty Ss decreasing in avoidance after treatment and only one increasing.

An incidental observation revealed that Ss scoring in the middle range of the R-S scale obtained higher overall avoidance scores than Sensitizors or Repressors ($P \leq .05$).

Evidence was also found for differential decreases in avoidance scores after treatment related to type of defense ($P < .05$). Further analysis revealed that Repressors improved less than Sensitizors (the second largest difference) by a $\underline{t}$ test ($P \leq .01$), and therefore also less than Intermediates.

Analysis of the subjective reports of fear before and after treatment also failed to validate the hypothesis that the level of anxiety during visualization affects the amount of fear reported in the presence of the feared object. Again there is strong evidence for an overall treatment effect with thirty-seven Ss reporting less fear after treatment at the point

of closest approach before treatment.

An interaction just short of the .05 level of significance suggests differential improvement in the three defense groups. Ss scoring in the middle range of the R-S scale tend to decrease less in fear than the other two groups.

Correlations were also computed between FT scores obtained during treatment and Pre and Post Therapy Fear and Avoidance scores. Most correlations were minute, and all insignificant except for the Repressors where correlations of .47 ($P < .05$) and .39 were obtained between the mean FT during rehearsal and avoidance and fear after treatment. Post therapy fear and avoidance scores are also highly related in Repressors ($R = .72$). The Repressors are, in fact, the only group to provide support for the Wolpe hypothesis that high levels of anxiety during visualization may detract from effectiveness of treatment, of that fear and avoidance are intimately related. For both Sensitizors and the Intermediate group, avoidance behavior does not appear to be the inevitable or customary response to anxiety. The results of the present study failed to confirm the predictions as derived from the theories of Stampfl and Wolpe. No significant differences in fear or avoidance of a feared stimuli were produced by three different treatment conditions which had been shown to differ reliably in level of fear present during treatment. One may, therefore, seriously question the presumption that anxiety modulation is indeed as crucial a factor in desensitization therapies as has been asserted. Alternately, one may conclude that a more careful specification of the conditions is needed under which anxiety level becomes a significant variable.

The results of the present study are in contradiction to earlier studies

such as those of Davison (1965), Rachman (1966), and Lomont and Edwards (1967), which found the conventional Reciprocal Inhibition Technique to be more effective than control conditions in which anxiety was not suppressed. However, the results are more consonant with two other studies in which the authors of this paper had supervisory roles. Myerhoff (1967) found a muscular tension high anxiety condition at least as effective in reducing fear and more effective in reducing avoidance than a simple cognitive rehearsal, no motor performance condition. Evans (1968) reports that when a group which receives electric shock at the point of visualizing picking up a snake is compared to a no treatment control both groups decrease in anxiety, with a slight superiority for approach in the experimental group. Folkins (1968) also reports results compatible with present findings.

Perhaps the most significant positive contribution of the study being reported derives from the demonstration of an empirical relationship between a personality variable (R-S scale) and effectiveness of desensitization treatments, since previous studies have failed to identify such relationships. The finding of little relationship between fear and avoidance behavior in Sensitizors and the Intermediate group also serves to underscore the simplistic character of some contemporary conceptualizations of phobic behavior.

A fear history questionnaire constructed by the first author consisting of 18 scorable items designed to ascertain the generality and extensiveness of the fear being treated was also administered to 41 S. The total score correlated significantly with all pre and post measures of fear and avoidance. Items correlating significantly with amount of avoidance after treatment included having painful experiences with the feared object (r= .32), knowledge of the fear in other family members (r=.42), interference with normal activities (r= .31), and uncomfortableness as a topic of conversation (r=.42), and total score (r=.41).

An imagery questionnaire of ten scorable items was completed by 31 Ss after the first session. Four items and a total score were significantly related to fear reported before treatment, but little relationship seemed to exist to other fear or avoidance scores. Items answered in a manner suggesting that the image was perceived clearly, without distortion, with a sense of realness and in color were related to high amounts of fear reported before treatment.

The results with these two questionnaires added to the success of the R-S scale, raise the issue of the potential usefulness of measures of individual differences in increasing the appropriateness and effectiveness of desensitization therapies.

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